

CLAIMS:

1. A coil system (210) for an apparatus which operates in conformity with the spin resonance or magnetic resonance (MR) method, which coil system (210) encloses an examination space (217), which extends along an axis (218) and is intended to receive a patient (215), and includes an inner RF coil (219), an inner sub-coil (213') which externally encloses the RF coil (219) and projects beyond the RF coil (219) in the axial direction at both sides, and an active shield (212) which externally encloses the inner sub-coil (213') and constitutes a gradient coil arrangement in conjunction with the inner sub-coil (213'), characterized in that, in order to reduce the energy required for the gradient coil system (213', 212), the volume which is present between the inner sub-coil (213') and the active shield (212) is enlarged in that the cross-section of the inner sub-coil (213') in the direction perpendicular to the axis (218) is smaller in regions to both sides of the RF coil (219) than in the region of the RF coil.
2. A coil system as claimed in claim 1, characterized in that, in order to introduce a patient (215) into the examination space (217), at the lower side of the examination space (217) there is provided a patient table (216) which is displaceable along the axis (218) and that the inner boundary of the inner sub-coil (213') extends preferably parallel to the axis (218) in the regions extending beyond the RF coil (219) in the axial direction.
3. A coil system as claimed in claim 2, characterized in that at the upper side of the examination space (217) the coil system is separated from the examination space (217) by a cover (214) which opens towards the outside in the regions extending beyond the RF coil (219) in the axial direction, and that the inner boundary of the inner sub-coil (213') extends parallel to the cover in the regions extending beyond the RF coil (219) in the axial direction.
4. A coil system as claimed in claim 1, characterized in that in the regions extending beyond the RF coil (219) in the axial direction the distance between the inner sub-coil (213') and the axis (218) is larger than or equal to the distance between the RF coil (219) and the axis (218).

5. A coil system as claimed in claim 1, characterized in that the inner sub-coil (213') is symmetrical relative to a central plane (221) extending perpendicularly to the axis (218).

6.

An MR apparatus which includes a coil system (210) for generating a uniform, steady magnetic field whose strength defines the Larmor frequency, and for generating RF pulses and for receiving MR signals generated in an object (215) to be examined, characterized in that the coil system (210) is constructed as disclosed in claim 1.